

# GC Detection System

# SecureDetect

Registered Patent

## **FEATURES & BENEFITS**

- Highly accurate
- Real-time analysis
- Light weight
- Detects standard commercial substances and improvised compounds
- Simple user interface
- Audio-visual “go/no go” alarms
- Portable and desktop applications
- Low maintenance

## **APPLICATION**

Government offices, embassies, airports, chemical plants, border checkpoints, correctional facilities, ground forces, power plants, sporting events, conventions, oil and gas refineries\storage depots and other sensitive sites.

## **SPECIFICATIONS**

- Detector dimensions w/o ruggedized external casing 35X16X15cm



## **Introduction to the technology:**

The technology is based on Gas Chromatography with Electron Capture Detection (GC/ECD) in 2 configurations, Mobile or Fixed, which detects regular and improvised explosives.

An Electron Capture Detector (ECD) detects explosives and other types of molecules having high electron affinities. In an ECD, a vapor sample is drawn into an inlet port. The gas flow passes through a chamber with a radioactive material that acts as an electron source.

The emitted electrons are eventually collected at an anode. The standing current will be reduced if the vapor of an explosive enters the chamber.






Gas Chromatography (GC) is a well-known technology used for the detection of explosives in laboratories as well as in the field, but devices are generally configured as large, stationary apparatuses where the time for obtaining results could be minutes, hours or even days. As such, the operating costs can be very high.

We have developed a unique GC which is very small, portable, fast (only a few seconds per cycle). The unique design facilitates fast recovery, requires low maintenance and is affordable.

A gas chromatograph is placed on the front end of an ECD detector for the purpose of separating the compounds in the air mixture, allowing them to enter the ECD chamber one by one, providing enhanced overall detection sensitivity.

The development has been to successfully integrate the GC with an ECD in a hand-held apparatus enabling high sensitivity and selectivity.



Environmental influence on the system	NO
Expendable parts for the system	Low
Mobility	
Easy Calibration	
Calibration Time per Day	15 seconds
Recovery time from explosives detection	Seconds
Analysis time	4 seconds Programmable
Sampling time	4 seconds Programmable
Visual and audible alarm notification	
Simple installation and calibration	
Throughput rate	10 samples for 2 minutes
False Alarms	NO (GC Technology )
Total Processing Time	About 8 seconds Programmable
Relevance to threat	

## Detection Competence:

### Explosive type (partial list)

RDX	PETN	HMX
C-4	Detonation cord	Semtex H
Semtex Ten	Gun powder double base	TNT – flakes
TNT – cast	HEXAN	DNT
ANFO	Ammonium Nitrate	Urea Nitrate
EGDN – standard solution	TATP – standard solution	Black powder